Research Note

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

INTERMOUNTAIN FOREST & RANGE EXPERIMENT STATION
OGDEN UTAH

U.S. Forest Service
Research Note INT-65 1967

MARKET TRENDS FOR WESTERN WHITE PINE

Robert E. Benson and Larry L. Kirkwold [1]

ABSTRACT

Western white pine has historically been one of the most important timber species harvested in the Rocky Mountain area. This study summarizes changes that have taken place during the past 4 decades in western white pine lumber production, lumber prices, and major manufacturing uses.

Western white pine (Pinus monticola Dougl.) historically has been one of the most economically important timber species harvested in the Rocky Mountain area. Since 1920, it has comprised about 15 percent of the lumber produced in the nine Mountain States and was one of the mainstays in the development of the timber industry, using the forest resources in the white pine region of northern Idaho and adjacent areas.[2] Because of its desirable qualities, white pine has generally been regarded as a premium lumber species and has consistently brought higher prices than other species in the Mountain States. The establishment of blister rust control units and intensive efforts to control this disease reflect the importance of white pine in past timber management programs.

During the past 2 decades, there has been an apparent shift in the role of white pine in the timber industry of the area and in its position in national markets. Total lumber production in the Mountain States has increased rapidly with the expanded harvest of species that had been only lightly utilized in the past. White pine production has remained relatively stable because there was little room for expanded output without overcutting. Average lumber prices of most Mountain States' species have increased in relation to white pine lumber prices.

---

[1] Benson is Marketing Analyst at the Forestry Sciences Laboratory in Missoula, Montana, which is maintained by the Forest Service in cooperation with the University of Montana.

Kirkwold was formerly Associate Marketing Analyst with the Station. He is now with the Weyerhaeuser Company, located in Tacoma, Washington.

[2] Matthews, Donald N., and S. Blair Hutchison. Development of a blister rust control policy for the National Forests in the Inland Empire. U.S. Forest Serv., Northern Rocky Mountain Forest and Range Exp. Sta., Sta. Pap. 16. 1948.

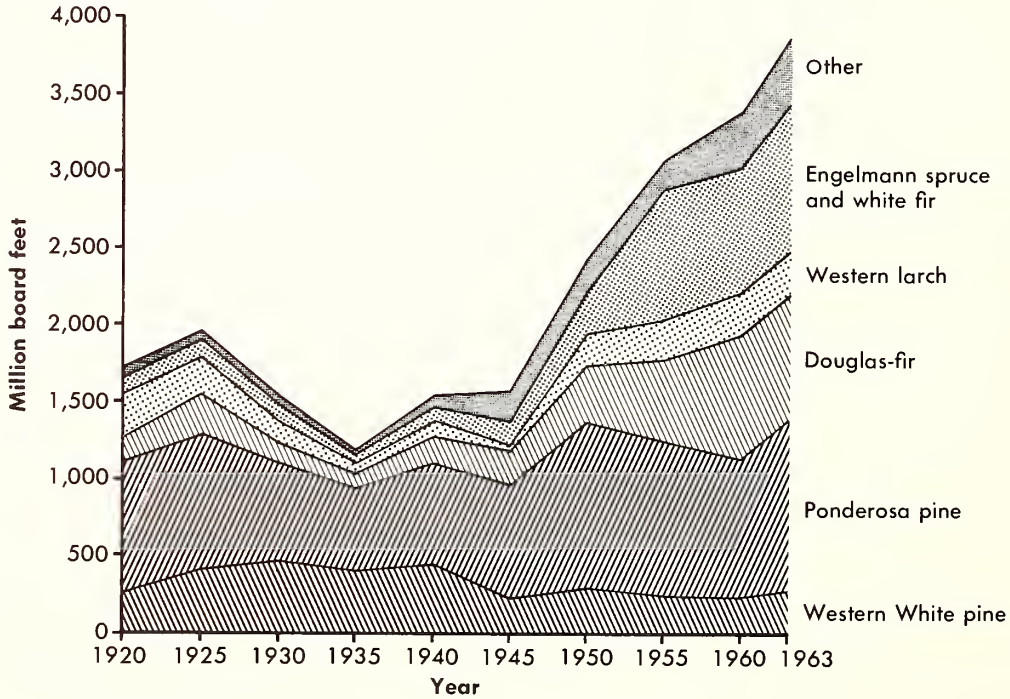
Changes such as these are important in resource planning since management objectives should reflect not only growth potential of the land and management costs but also the demands of wood markets.

Projecting future wood needs is at best a speculative business, and anticipating future demands for white pine alone is beyond the scope of this study. However, this report summarizes information on past production, price, and uses of white pine that may provide some useful insight for those involved in management planning.

PRODUCTION AND PRICES OF LUMBER

Production of white pine lumber in the Mountain States began in the 1890's and was at its peak during the 1930's when annual production averaged over 350 million board feet (fig. 1). During the depressed markets of the 1930's when production from other species declined sharply, white pine production remained relatively stable and, along with ponderosa pine, was the mainstay of the area's lumber industry.

Following World War II, the building boom increased the demand for lumber and expanded the utilization of Douglas-fir, western larch, Engelmann spruce, white fir, and other species in the Mountain States. Total lumber production in the area climbed to 3.8 billion board feet in 1963. During this postwar period, white pine lumber production stabilized at about 250 million board feet per year.



Source: USDA 1948. Lumber production in the United Stotes 1799 - 1946
Henry B. Steer. USDA Misc. Pub. 669
U.S. Dep. Cammerce. Lumber Productian and Mill Stocks
Ser. M13G-09 and M24T.

Figure 1.--Lumber production in the Mountain States (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, South Dakota, Utah, and Wyoming), 1920-1963.

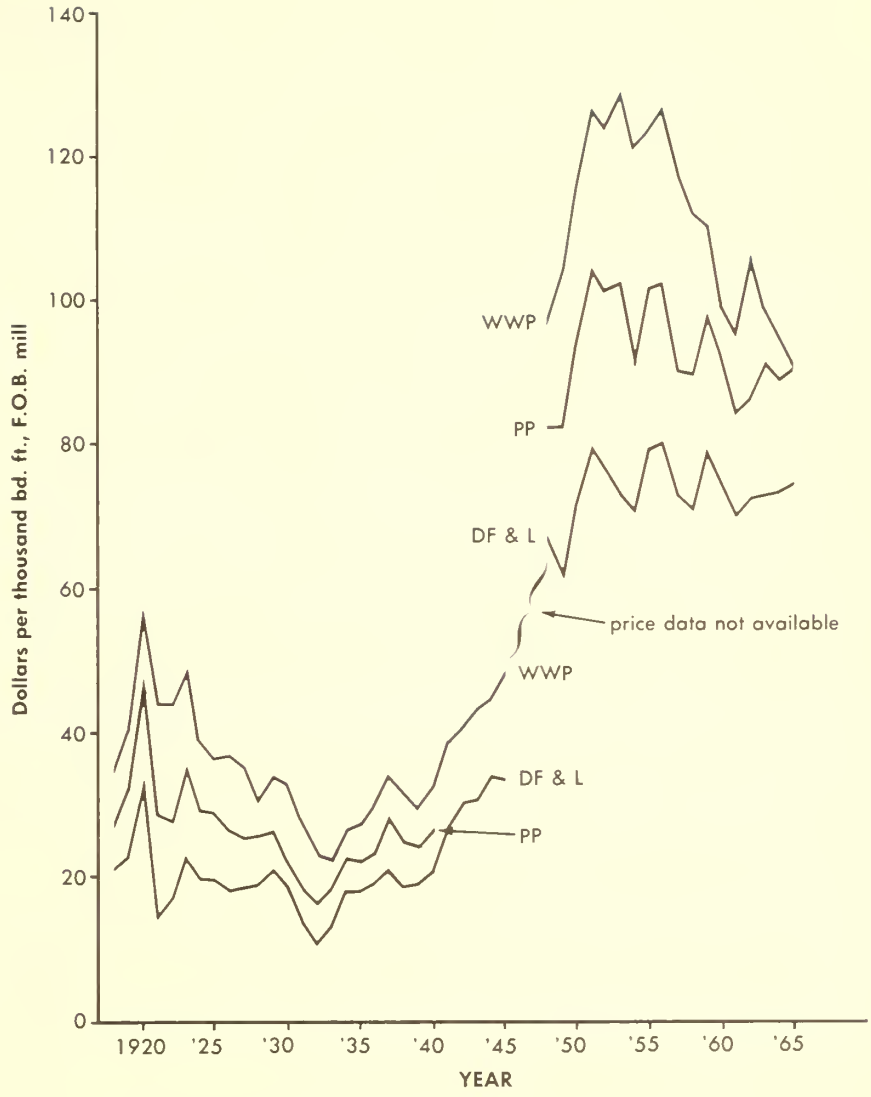


Figure 2.--Average wholesale lumber prices for western white pine, ponderosa pine, and Douglas-fir and larch, 1918-1965.

SOURCE: Western Pine Assoc. and Western Wood Products Assoc. Yearly price summaries

The average wholesale price of white pine lumber has historically been higher than prices of the other principal lumber species of the region. It has maintained this position despite fluctuations from a low of $22/M bd.ft. in 1933 to a peak of $129/M bd.ft. in 1953 and a subsequent decline to $91/M bd.ft. in 1965 (fig. 2).

When lumber prices declined during the depression years, white pine prices held up better than those of other species, and the relative margin between prices of white pine and other species increased. Since the depression, however, the prices of other species have generally improved relative to white pine, particularly during the past decade (table 1).

This change in price relationships along with the increase in production of other species has reduced white pine's share of the total wholesale value of lumber produced in the Mountain States. In 1963, white pine accounted for about 10 percent of the value, compared to 42 percent in 1930 and 37 percent in 1940 (table 2).

Table 1.--Index of average wholesale lumber price for principal Mountain States' species, white pine = 100

Species	Period				
	1920-1929	1930-1939	1940-1949[1]	1950-1959	1960-1965
	Average index for period				
Western white pine	100	100	100	100	100
Ponderosa pine	74	78	82	81	92
Douglas-fir and western larch	50	60	69	63	75
Engelmann spruce	64	67	79	69	75
White fir	52	48	59	56	62

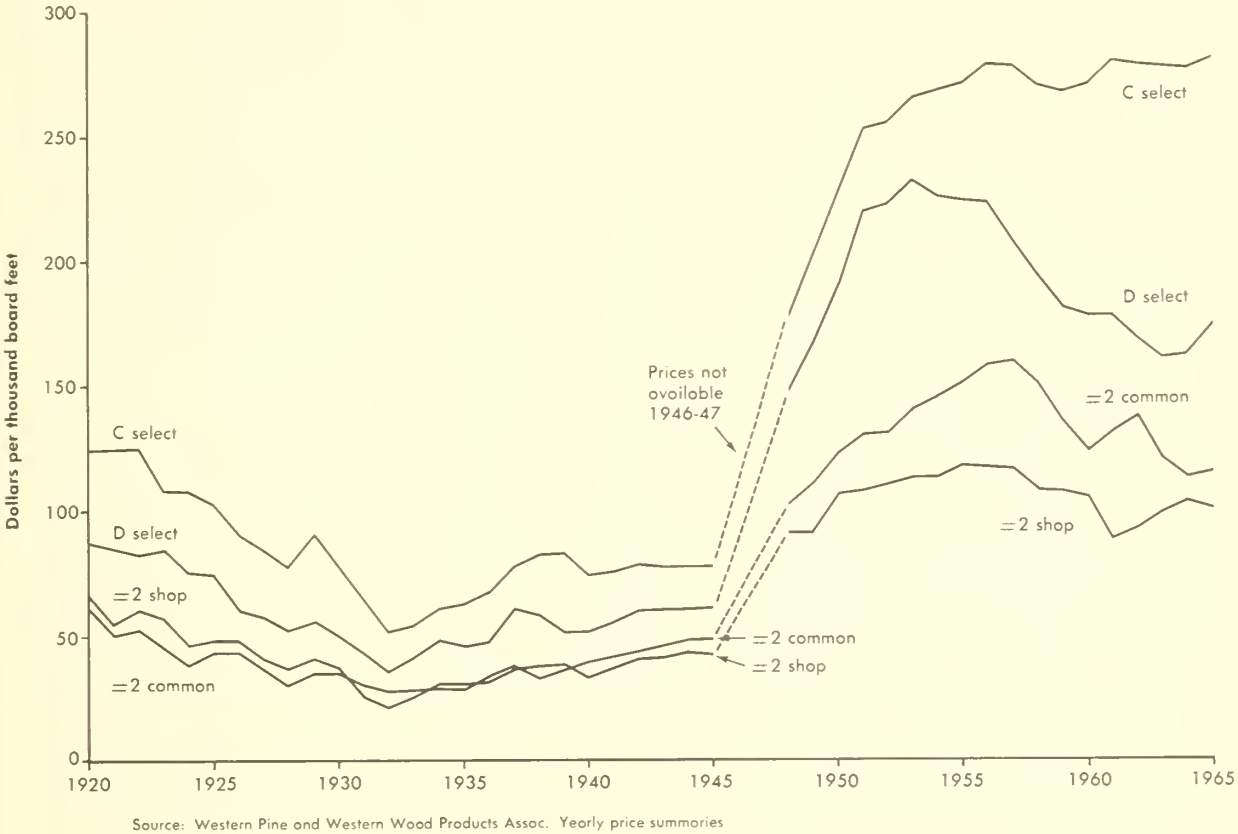
[1]Price data are not complete for this period. Index is based on averages for following years; ponderosa pine and white fir--1940, 1948, and 1949; Engelmann spruce and Douglas-fir and western larch, 1940-1945, 1948, and 1949.

Price trends for the various grades of white pine lumber have differed. Prior to the mid-1950's, there was a fairly constant relation between prices of the different grades of white pine lumber, but since the mid-1950's there have been divergent price trends. Price of C select has remained fairly level and prices of shop grades have declined only slightly. However, the prices of D select and common grades have dropped substantially. Figure 3 shows price trends for some representative grades of white pine lumber.

The price relation between white pine and ponderosa pine, the other principal board lumber species of the Mountain States, also has varied by grade. In select and shop grades, the prices of the two species are virtually the same (fig. 4). In common grades, white pine has retained substantial price margins (fig. 5).

Table 2.--Distribution of total wholesale value of lumber produced from principal Mountain States' species

Species	Year					
	1920	1930	1940	1950	1960	1963
	Percent					
Western white pine	20	42	37	17	10	10
Ponderosa pine	54	39	45	52	34	37
Douglas-fir and western larch	19	14	14	22	33	30
Engelmann spruce	3	2	3	5	11	10
White fir	4	3	1	4	12	13
Total, principal species	100	100	100	100	100	100



Source: Western Pine and Western Wood Products Assoc. Yearly price summaries

Figure 3.--Wholesale price of western white pine lumber selected grades, 1920-1965.

TRENDS IN WOOD USE

In 1960, manufacturing industries used about one-third of the total western white pine lumber production and almost 60 percent of the higher value grades of white pine lumber: select, shop, and #1 and #3 common (table 3).

Within this market, there have been some significant shifts in white pine use. Most notable is the sharp decline in manufacture of wood matches. The wood match industry used over 70 million board feet of western white pine in 1933, or over half of the western white pine used by manufacturing industries that year. By 1960, only about one-half million board feet of white pine was used by the wood match industry (fig. 6). This market, which was almost exclusively served by western white pine, has virtually disappeared.

Since the decline of the wood match market, the millwork industry has been the biggest manufacturing outlet for white pine lumber; in 1960, nearly half the white pine used in manufacturing went to the millwork industry. White pine used in boxes and crates has declined, but its use for patterns, furniture, and other industries has gradually increased since 1933.

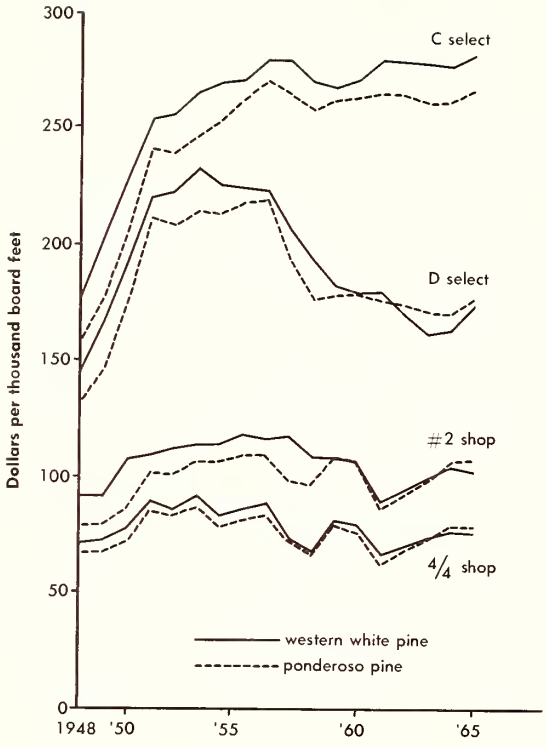


Figure 4. --Wholesale lumber price of western white pine and ponderosa pine, select and shop grades, 1948-1965.

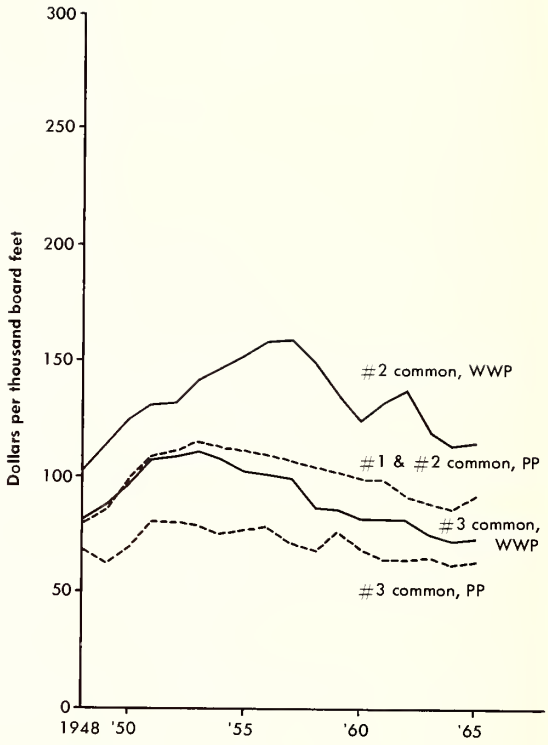


Figure 5. --Wholesale lumber price of western white pine and ponderosa pine, common grades, 1948-1965.

White pine accounts for a relatively small proportion of the total softwood lumber used by manufacturing industries. About 10 percent of all softwood lumber used in patterns and flasks is white pine. In millwork and furniture manufacturing, about 7 percent of the total softwood lumber used is white pine.

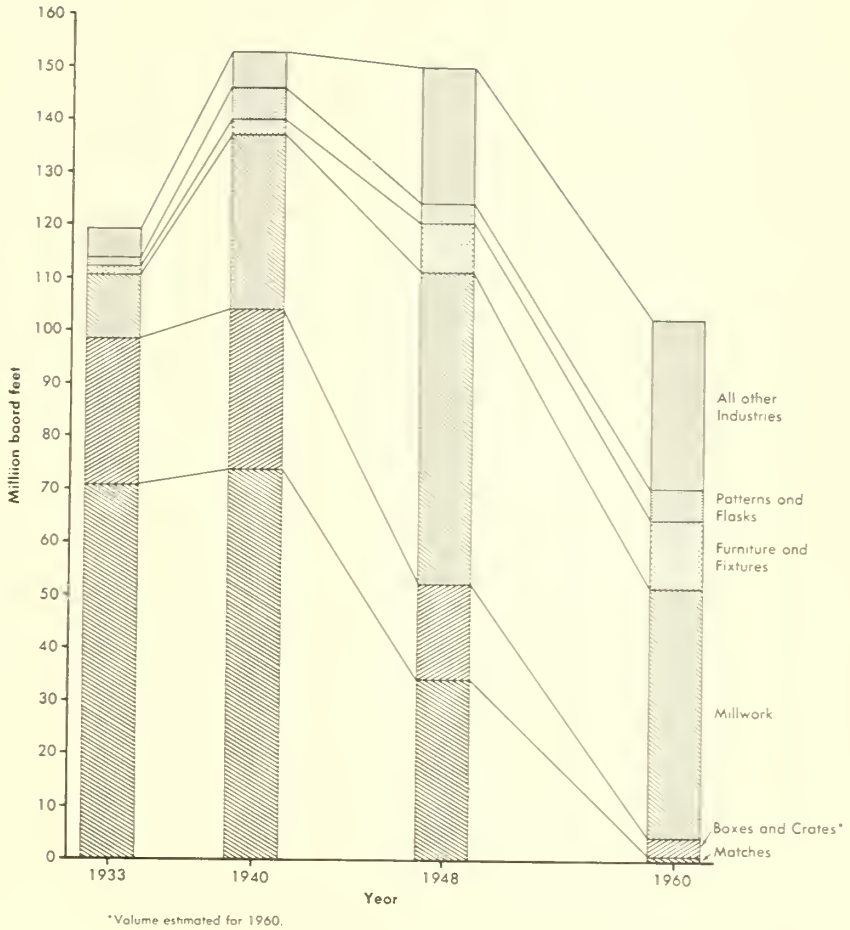
The decline in use of boards for sheathing, subflooring, and roofing in light construction constitutes the loss of another volume market for several species, including white pine. Plywood has made major inroads into this market, which was formerly an outlet for lower grades of soft pine lumber.[3]

White pine plywood is a relatively minor item in national markets. Nevertheless, about 111 million square feet (3/8-inch basis) of white pine plywood was produced in the Mountain States in 1965. This was about 15 percent of the total plywood production in these States.[4]

[3] Phelps, Robert B. Wood products used in single family houses inspected by the Federal Housing Administration 1959 and 1962. U.S. Dep. Agr., Forest Serv., Statist. Bull. 366. 1966.

[4] Forest Industries. 35th Annu. Plywood Rev. (93): 1. 1966.

Figure 6.--Western white pine used in manufacturing industries.



CONCLUSIONS

Past use patterns and price relations among species and grades have only a limited relevance to wood markets that are now evolving. The shift in industrial uses for white pine noted in this study and development of new uses, such as white pine plywood, are examples of changing wood markets. It is likely that further substitution among species, as well as new developments of both wood and nonwood materials will be the major factors that determine the amount used and the price paid for any individual species in the future.

The market trends presented in this report provide one measure of white pine's role in wood markets. Another important consideration is the technological suitability of white pine and other species in specific end uses. The critical limits of wood performance and costs of substitution among species are not always fully reflected in overall market data such as production, price, and use trends.

Table 3.--Western white pine lumber used in manufacturing industries in 1960, by grade

Grade	Western white pine lumber		
	Used in manufacturing industries	Other uses	Total production
	Million board feet		
Select and Shop	18	25	43
#1 and #2 Common	57	33	90
#3 Common and lower	27	172	199
Total	102	230	332

FOREST SERVICE CREED

The Forest Service of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's Forest Resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.